

TECHNICAL INFORMATION AND SERVICE DATA

RADIOLA

Model 526-M

FIVE VALVE, THREE BAND, A.C. OR D.C.
OPERATED SUPERHETERODYNE

ISSUED BY
AMALGAMATED WIRELESS (A/SIA) LTD.



ELECTRICAL SPECIFICATIONS.

FREQUENCY RANGES:

Medium Wave..... 540-1600 Kc/s (555-187.5 M)
Short Waves..... 2.3-7 Mc/s (130-43 M)
7-22 Mc/s (43-13.6 M)

INTERMEDIATE FREQUENCY: 455 Kc/s

Power Supply Rating: 210-250 volts A.C. or D.C. (See
"Connection to Power Supply" for 105-125 volts operation)

Power Consumption..... 210-250 V. 60 Watts
105-125 V. 30 Watts

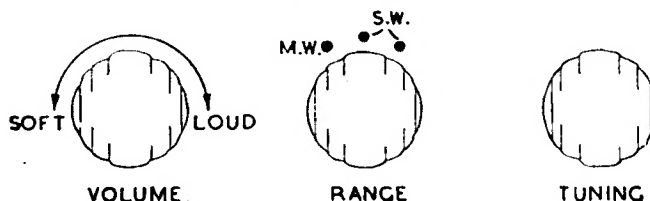
Valve Complement.

- (1) X76M Converter
- (2) W76 I.F. Amplifier
- (3) DH76 Detector, A.F. Amplifier, A.V.C.
- (4) KT71 Output
- (5) U76 Rectifier
- 161 Barretter

Loudspeaker (Permanent Magnet)

5 inch—code number AC46
Transformer—XA21
V.C. Impedance—3 ohms at 400 C.P.S.

CONTROLS 526 - M



MECHANICAL SPECIFICATIONS.

	Height	Width	Depth
Cabinet Dimensions (inches)	7 $\frac{3}{4}$	12	6 $\frac{3}{4}$
Chassis Base Dimensions (ins.) ..	2 $\frac{1}{2}$	11	5 $\frac{1}{2}$
Weight (nett lbs.)	16		
Cabinet Colours: Walnut, Ivory, Burgundy			

General Description.

The Model 526-M is on A.C./D.C. operated montel model, housed in a moulded plastic cabinet

Features of its design include:—

Tropic-proof construction, automatic volume control, magnetite cores in I.F. transformers and broadcast oscillator coil, air-dielectric trimming copocitors.

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance in ohms
Aerial Coil (M.W.)	
Primary (L2)	16
Secondary (L3)	5
Aerial Coil (S.W.)	
Primary (L7)	3
Secondary (L8)	*
R.F. Coil (M.W.)	
Primary (L4)	35
Secondary (L5)	4
R.F. Coil (S.W.)	
Primary (L9)	*
Secondary (L10)	*
Oscillator Coil (M.W.) (L6)	5
Oscillator Coil (S.W.) (L11)	*
I.F. Filter (L1)	17.5†
I.F. Transformer Windings	10
R.F. Choke (L17, L19, L20)	*
H.T. Filter Choke (L16)	200
R.F. Choke (L18)	18
Loudspeaker Input Transformer (T1)	
Primary	430 or 525
Secondary	*
Vibrator Transformer (T2)	
Primary	3
Secondary	900

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations, and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES

VALVES	Cathode to Chassis Volts	Screen Grid to Chassis Volts	Plate to Chassis Volts	Plate Current mA	Heater Volts**
6BA6 R.F. Amp. M.W.	1.7	70	200	2.75	6.3
S.W.	1.8	70	200	2.85	6.3
6BE6 Converter M.W.	—	70	200	1.25	6.3
S.W.	—	70	200	1.25	6.3
6BA6 I.F. Amp.	1.8	70	200	3.1	6.3
6AV6 Det., A.F. Amp. A.V.C.05	—	70†	0.5	6.3
6AQ5 Output	9.0	200	190	34	6.3

Total H.T. Current — 56 mA.

Measured with receiver connected to 32V D.C. Supply.

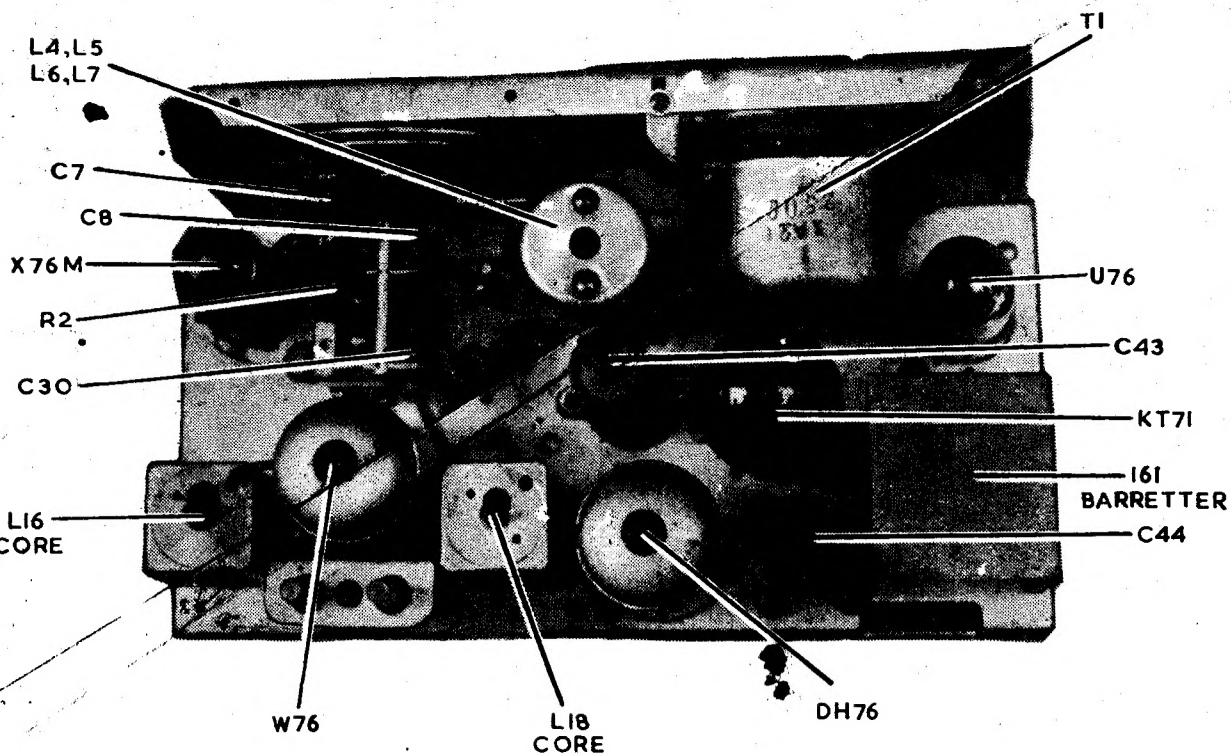
Total Input Current — 1.3 Amp.

Volume Control Max. Power-Tone Switch "Speech" Anti-clockwise Position. No Signal input.

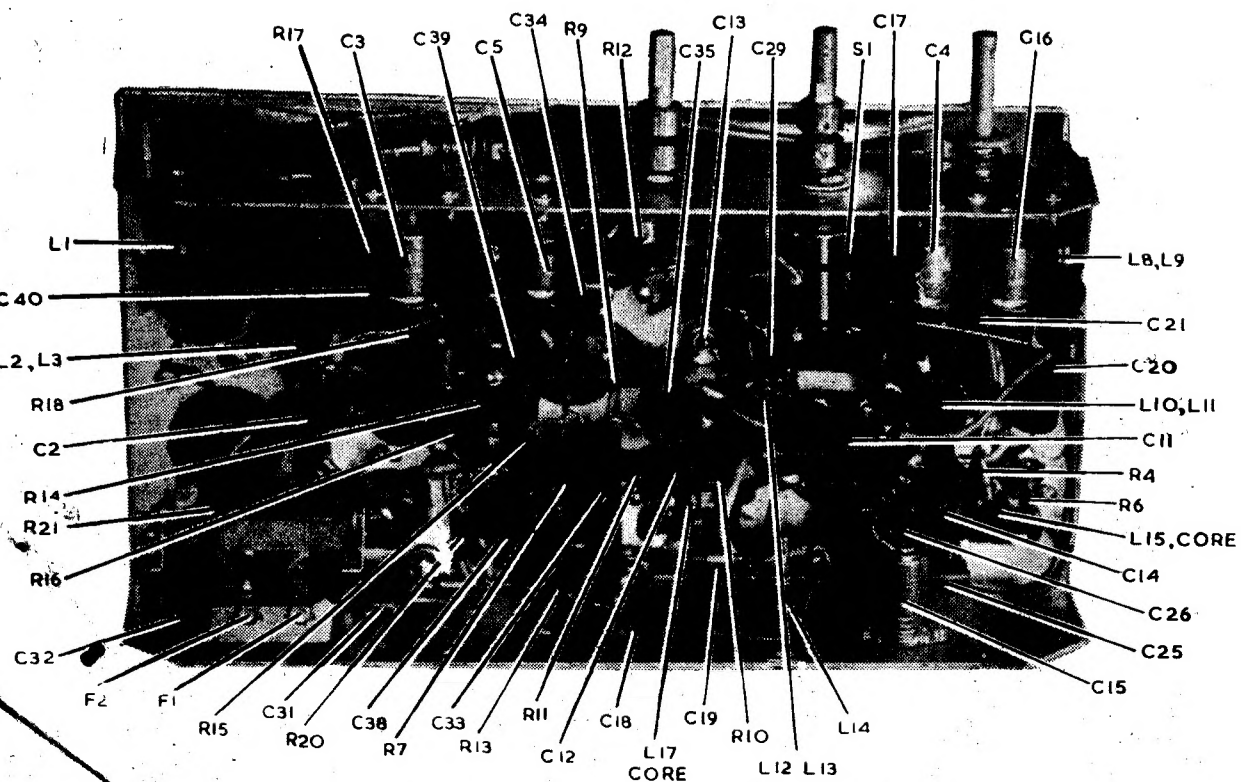
Voltmeter 1000 ohms per volt; measurements taken on highest scale giving accurate readable deflection.

† Cannot be measured with ordinary voltmeter.

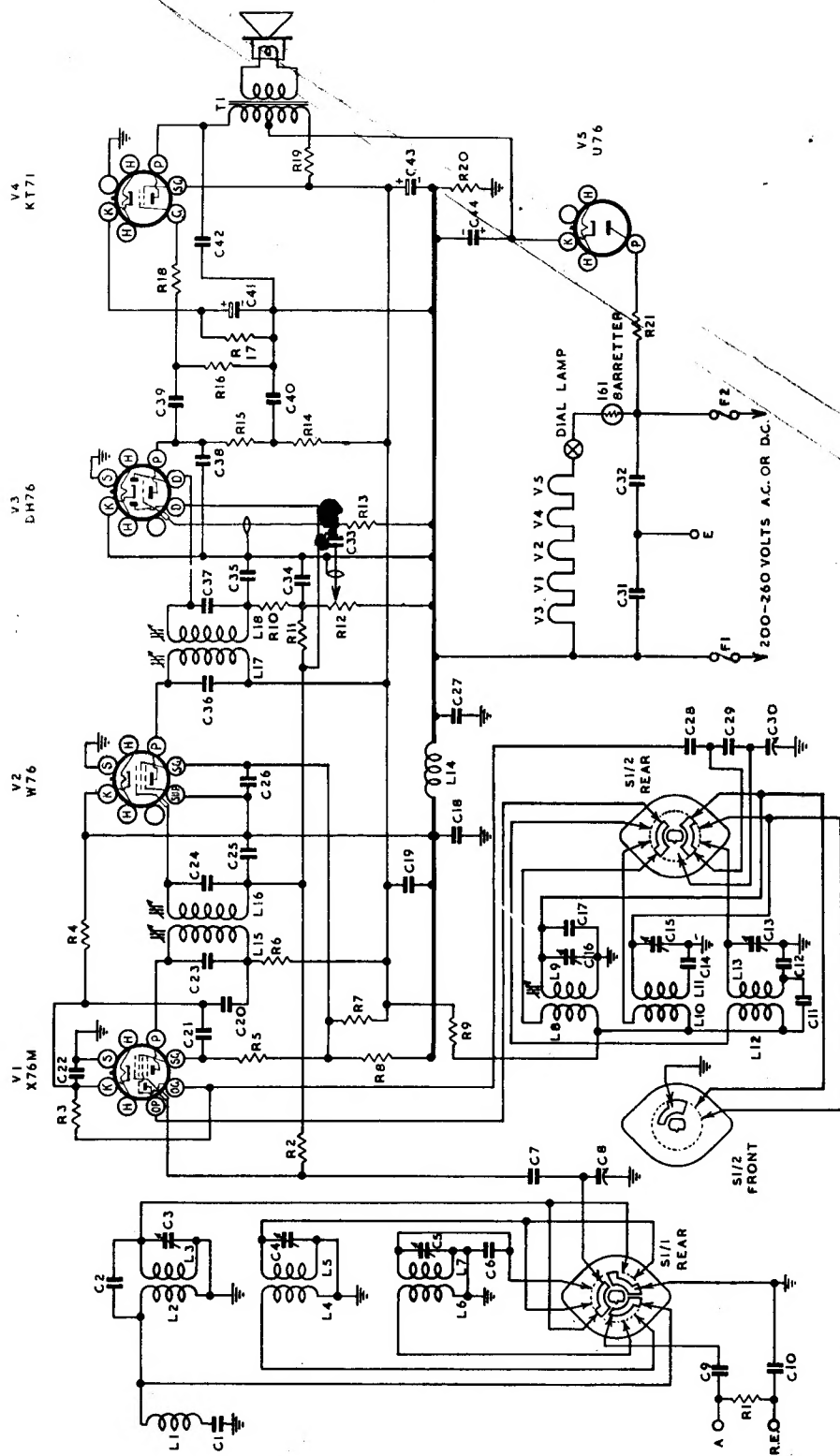
** These readings are nominal and will vary due to the Series Heater connections.



CHASSIS (Top View) 526-M



CHASSIS (Underneath View) 526-M



ALIGNMENT PROCEDURE.

Manufacturer's Setting of Adjustments.

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using specialised equipment.

For I.F. alignment, connect the "low" side of the signal

generator to the receiver chassis, whilst for all other alignment operations to the terminal marked "R.E.," i.e., Radio Earth. Also, keep the generator output as low as possible to avoid A.V.C. action and the volume control in the maximum clockwise position.

Testing Instruments.

- (1) A.W.A. Junior Signal Generator, type 2R3911, or

- (2) A.W.A. Modulated Oscillator, type J6726.

If the modulated oscillator is used, connect on 0.25 megohm non-inductive resistor across the output terminals, and, for short wave alignment, an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.

- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE.

Order	Connect "high" side of generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output
1	X76M*	455 Kc/s	540 Kc/s	L18 Core
2	X76M*	455 Kc/s	540 Kc/s	L17 Core
3	X76M*	455 Kc/s	540 Kc/s	L16 Core
4	X76M*	455 Kc/s	540 Kc/s	L15 Core
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s	600 Kc/s	L.F. Osc. Core Adj. (L9)†
6	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Osc. Adj. (C16)
7	Aerial Terminal	1500 Kc/s	1500 Kc/s	H.F. Aer. Adj. (C3)
Repeat adjustments 5, 6, and 7.				
8	Aerial Terminal	6.5 Mc/s	6.5 Mc/s	H.F. Osc. Adj. (C15)§
9	Aerial Terminal	6.5 Mc/s	6.5 Mc/s	H.F. Aer. Adj. (C4)§†
10	Aerial Terminal	20 Mc/s	20 Mc/s	H.F. Osc. Adj. (C13)§
11	Aerial Terminal	20 Mc/s	20 Mc/s	H.F. Aer. Adj. (C5)§†

*With grid clip connected. An 0.001 uF capacitor should be connected in series with the "high" side of the test instrument.

†Rock the tuning control back and forth through the signal.

§6.5 and 20 Mc/s setting on the dial corresponds with the 1500 Kc/s mark.

Use minimum capacity peak if two can be obtained. Check to determine that the trimmer has been adjusted to correct peak by tuning the receiver to approximately 5.6 Mc/s or 19.1 Mc/s as the case may be, where a weaker signal should be received.

‡ Use maximum capacity peak if two can be obtained.

Connection to Power Supply.

The design of the instrument is such that it may be connected to any supply, A.C. or D.C., for the following range:—

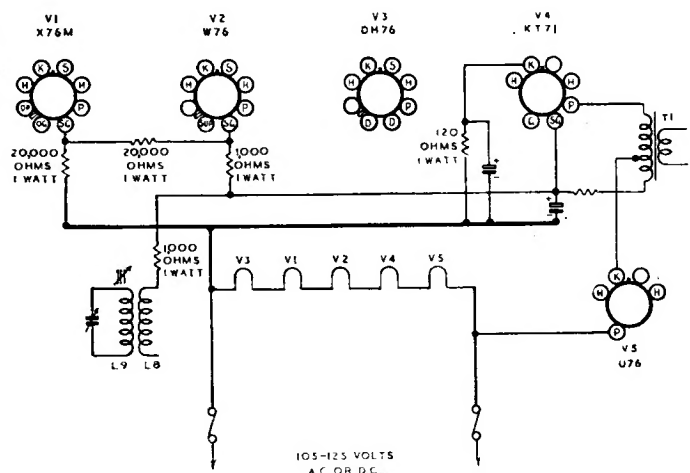
210-250 volts.

The receiver may, however, be operated from 115 volts mains after carrying out the circuit modifications shown in the accompanying diagram.

The following lists show the components to be deleted and those to be added:—

Delete: R5 — 800 ohms $\frac{1}{2}$ watt
R7 — 25,000 ohms 2 watt
R8 — 20,000 ohms 1 watt
R9 — 20,000 ohms 1 watt
R17 — 200 ohms 3 watt
R21 — 200 ohms 20 watt
161 Borretter
Panel Lamp

Add: 1 — 120 ohms 3 watt
2 — 1,000 ohms 1 watt
2 — 20,000 ohms 1 watt



Important.

When connected to D.C. mains, the receiver will operate only when the power cable is inserted in the power point with the correct polarity. Should the receiver fail to operate

after the warm-up period of two minutes has elapsed, switch off the power point and reverse the plug in the socket.

MODEL 526-M—CIRCUIT CODE.

Code No.	Description	Part No.
L1	I.F. Filter (including C1)	9382
L2, L3	Aerial Coil 540-1600 Kc/s	15454
L4, L5	Aerial Coil 2.3-7 Mc/s	17562
L6, L7	Aerial Coil 7-22 Mc/s	17562
L8, L9	Oscillator Coil 540-1600 Kc/s	9206A
L10, L11	Oscillator Coil 2.3-7 Mc/s	25115
L12, L13	Oscillator Coil 7-22 Mc/s	9205A
L14	R.F. Choke	25263
L15, L16	1st I.F. Transformer	25116
L17, L18	2nd I.F. Transformer	22703

RESISTORS

R1	0.1 Megohm $\frac{1}{2}$ watt	
R2	0.5 megohm $\frac{1}{2}$ watt	
R3	30,000 ohms $\frac{1}{2}$ watt	
R4	320 ohms $\frac{1}{2}$ watt	
R5	800 ohms $\frac{1}{2}$ watt	
R6	5,000 ohms $\frac{1}{2}$ watt	
R7	25,000 ohms 2 watt	
R8	20,000 ohms 1 watt	
R9	20,000 ohms 1 watt	
R10	50,000 ohms $\frac{1}{2}$ watt	
R11	2 megohms $\frac{1}{2}$ watt	
R12	0.5 megohm Volume Control	5707
R13	10 megohms $\frac{1}{2}$ watt	
R15	50,000 ohms 1 watt	
R15	0.25 megohm 1 watt	
R16	0.5 megohm $\frac{1}{2}$ watt	
R17	200 ohms 3 watt (wire wound)	
R18	50,000 ohms $\frac{1}{2}$ watt	
R19	1,000 ohms 1 watt	
R20	0.2 megohm $\frac{1}{2}$ watt	
R21	200 ohms 20 watt (wire wound)	

CAPACITORS

C1	50 μ F Silvered Mica	
C2	4 μ F Mica	
C3	2-20 μ F Air Trimmer	19659
C4	2-20 μ F Air Trimmer	19659
C5	2-20 μ F Air Trimmer	19659
C6	4 μ F Mica	
C7	200 μ F Mica	
C8	12-430 μ F Tuning	18621
C9	500 X μ F Mica (2000V test)	

Code No.	Description	Part No.
C10	500 X μ F Mica (2000V test)	
C11	0.05 μ F Paper 400V working	
C12	4000 μ F Padder $\pm 2\frac{1}{2}\%$	
C13	2-20 μ F Air Trimmer	19659
C14	1700 μ F Padder $\pm 2\frac{1}{2}\%$	
C15	2-20 μ F Air Trimmer	19659
C16	2-20 μ F Air Trimmer	19659
C17	4 μ F Mica	
C18	0.01 μ F Paper 600V working	
C19	0.02 μ F Paper 600V working	
C20	0.05 μ F Paper 400V working	
C21	0.05 μ F Paper 400V working	
C22	0.01 μ F Paper 600V working	
C23	70 μ F Silvered Mica	
C24	70 μ F Silvered Mica	
C25	0.05 μ F Paper 200V working	
C26	0.05 μ F Paper 400V working	
C27	0.035 μ F Paper 600V working	
C28	70 μ F Mica	
C29	470 μ F Padder $\pm 2\frac{1}{2}\%$	
C30	12-430 μ F Tuning	18621
C31	0.05 μ F Paper 400V working	
C32	0.05 μ F Paper 400V working	
C33	0.01 μ F Paper 600V working	
C34	100 μ F Mica	
C35	100 μ F Mica	
C36	70 μ F Silvered Mica	
C37	70 μ F Silvered Mica	
C38	200 μ F Mica	
C39	0.01 μ F Paper 600V working	
C40	0.1 μ F Paper 400V working	
C41	25 μ F 40 P.V. Electrolytic	
C42	0.025 μ F Paper 400V working	
C43	30 μ F 350 P.V. Electrolytic	
C44	30 μ F 350 P.V. Electrolytic	

TRANSFORMERS

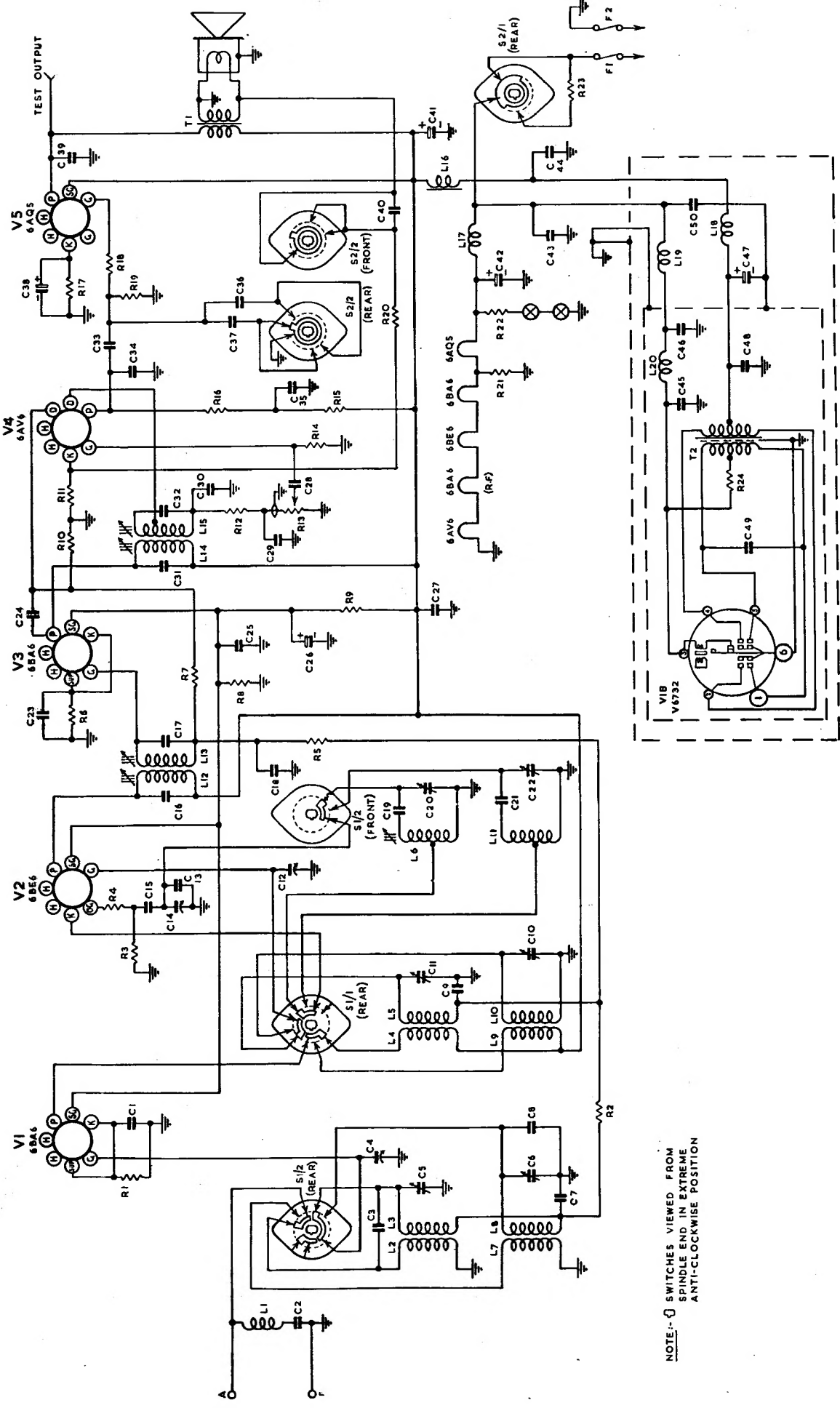
T1	Loudspeaker Transformer	XA21
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LOUDSPEAKER

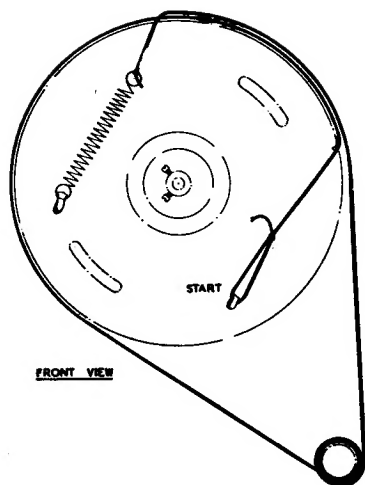
	5 inch Permanent Magnet	AC46
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SWITCHES

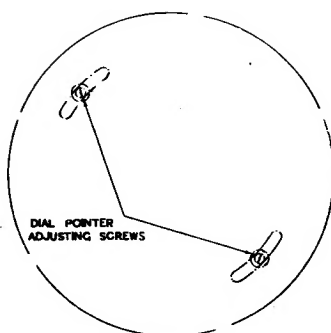
S1	Range Switch	25260
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NOTE:- SWITCHES VIEWED FROM SPINDLE END IN EXTREME ANTI-CLOCKWISE POSITION



FRONT VIEW



REAR VIEW

Chassis Removal.

First, remove the cabinet back, control knobs and felt washers—each knob is held by a set-screw. Then, remove two screws from underneath the cabinet and withdraw the chassis.

Dial Pointer Adjustment.

To shift the position of the dial pointer, loosen two screws in the rear of the drive drum—see accompanying drawing—move the pointer disc to the required position and retighten the screws. The diagram also shows the route of the drive cord and the method of attachment.

MECHANICAL REPLACEMENT PARTS.

Item	Part No.
Aerial Terminal Assembly	15941
Cabinet	22500
Cable, Volume	25105
Dial Scale	23380
Dial Pointer Assembly	20132
Drum Assembly, Drive	25261
Front Panel Assembly	25259A
Knob	17603
Panel Fuse	25110
Reflector Assembly	25252
Shield Valve	25258
Socket Valve	4704
Socket, Valve Cushion	20142
Spindle Extension	22477
Strap, Mounting	22471
Strip, Tag, 1 way	7628
1 way	22945
7 way	25559

D.C. RESISTANCE OF WINDINGS.

Winding	D.C. Resistance in Ohms
Aerial Coil (M.W.)	
Primary (L2)	30
Secondary (L3)	4
Aerial Coil (S.W.)	
Primary (L4)	6
Secondary (L5)	*
Primary (L6)	6
Secondary (L7)	*
Oscillator Coil (M.W.)	
Primary (L8)	2
Secondary (L9)	6
Oscillator Coil (S.W.)	
Primary (L10)	*
Secondary (L11)	*
Primary (L12)	*
Secondary (L13)	*
I.F. Transformer Windings	10
I.F. Filter (L1)	17.5†
R.F. Choke (L14)	60
Loudspeaker Input Trans- former (T1)	
Primary	125
Secondary	*

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

*Less than 1 ohm.

†In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES. MODEL 526-M.

Valve	Cathode to Negative Volts	Screen Grid to Negative Volts	Anode to Negative Volts	Anode Current mA	Heater Volts
X76M Converter	2.0	65	185	0.7	13.0
Oscillator	—	—	90	5.0	—
W76 I.F. Amp.	0	65	190	3.0	13.0
DH76 Det., A.F. Amp., A.V.C.	0	—	70*	0.4	13.0
KT71 Output	13.0	190	205	60.0	48.0
U76 Rectifier	215	—	—	—	30.0

Measured at 240 V. A.C. Supply. No signal input. Volume Control maximum clockwise.

*Cannot be measured with an ordinary voltmeter.